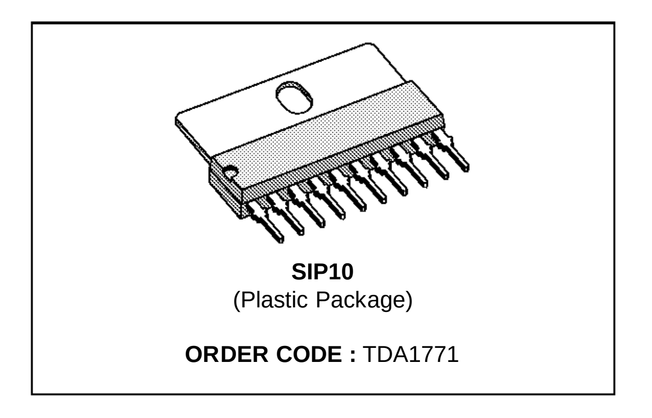


TDA1771

VERTICAL DEFLECTION CIRCUIT

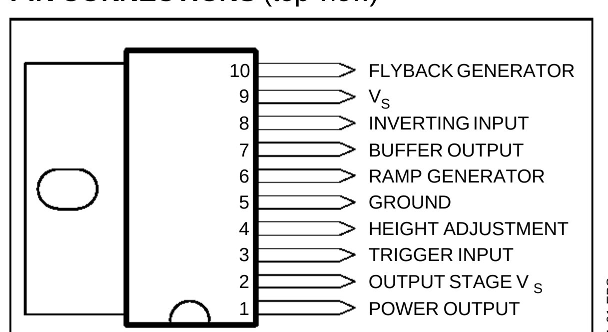
- RAMP GENERATOR
- INDEPENDENT AMPLITUDE ADJUSTEMENT
- BUFFER STAGE
- POWER AMPLIFIER
- FLYBACK GENERATOR
- INTERNAL REFERENCE VOLTAGE
- THERMAL PROTECTION



SIP10
(Plastic Package)

ORDER CODE : TDA1771

PIN CONNECTIONS (top view)

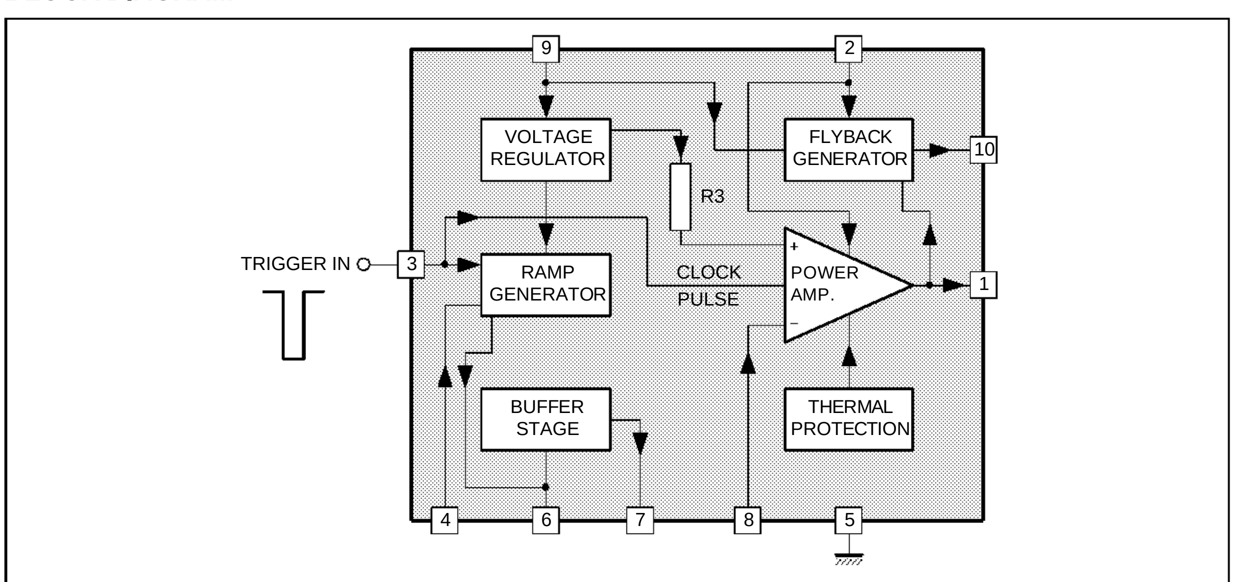


DESCRIPTION

The TDA1771 is a monolithic integrated circuit in SIP10 package.

It is a full performance and very efficient vertical deflection circuit intended for direct drive of a TV picture tube in Color and B & W television as well as in Monitor and Data displays.

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	Supply Voltage	30	V
V_1, V_2	Flyback Peak Voltage	65	V
V_3	Trigger Input Voltage	20	V
V_8	Amplifier Input Voltage	GND to V_S	V
I_0	Output Peak to Peak Current (non repetitive t = 2ms)	6	A
I_0	Output Peak to Peak Current t > 10μs	4	A
I_{10}	Pin 10 DC Current at $V_1 < V_9$	100	mA
I_{10}	Pin 10 Peak to Peak Current @ t_{fly} < 1.5ms	3	A
P_{tot}	Total Power Dissipation @ T_{tab} = 60°C	9	W
T_S, T_J	Storage and Junction Temperature	– 40, + 150	°C

1771-01.TBL

THERMAL DATA

Symbol	Parameter		Value	Unit
$R_{th\ (j-tab)}$	Thermal Resistance Junction-tab	Max.	10	°C/W
$R_{th\ (j-a)}$	Thermal Resistance Junction-ambient	Max.	70	°C/W

1771-02.TBL

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
DC (V_S = 30V)						
I_2	Pin 2 Quiescent Current	$I_1 = 0$, $I_{10} = 0$		16	36	mA
I_9	Pin 9 Quiescent Current	$I_1 = 0$, $I_{10} = 0$		15	30	mA
$– I_6$	Ramp Generator Bias Current	$V_6 = 0$			0.5	μA
$– I_6$	Ramp Generator Current	$V_6 = 0$, $– I_4$ = 20μA	18.5	20	21.5	μA
dI_6/I_6	Ramp Gener. Linearity	V_6 = 0 to 15V, $– I_4$ = 20μA		0.2	1	%
V_1	Quiescent Output Voltage	R_a = 30kΩ, R_b = 10kΩ, V_S = 30V	17.0	17.8	18.6	V
		R_a = 6.8kΩ, R_b = 10kΩ, V_S = 15V	7.2	7.5	7.8	V
V_{1L}	Out Saturation Voltage to GND	I_1 = 0.5A		0.5	1	V
		I_1 = 1.2A		1	1.4	V
V_{1H}	Out Saturation Voltage to V_S	$– I_1$ = 0.5A		1.1	1.6	V
		$– I_1$ = 1.2A		1.6	2.2	V
V_4	Reference Voltage	$– I_4$ = 20μA	6.3	6.6	6.9	V
dV_4/V_S	Reference Voltage Drift Versus V_S	V_S = 10V to 30V		1	2	mV/V
$dV_4/d_{I\ 4}$	Reference Voltage Drift Versus I_4	I_4 = 10μA to 30μA		1.5	2	mV/μA
V_r	Internal Ref. Voltage		4.26	4.40	4.54	V
Gv	Ouput Stage Open Loop Gain	f = 100Hz		60		dB
V_{fs}	V_{9-10} Saturation Voltage	$– I_{10}$ = 1.2A		1.5	2.5	V
V_{10}	Pin 10 Scanning Voltage	I_{10} = 20mA		1.7	3	V
V_3	Trigger Input Threshold	(see note 1)	2.6	3.0	3.4	V
I_3	Trigger Input Bias Current	$V_{IN} = V_3 – 0.2V$			30	μA
t_3	Trigger Input Width	(see note 2)	20	60	th	μS

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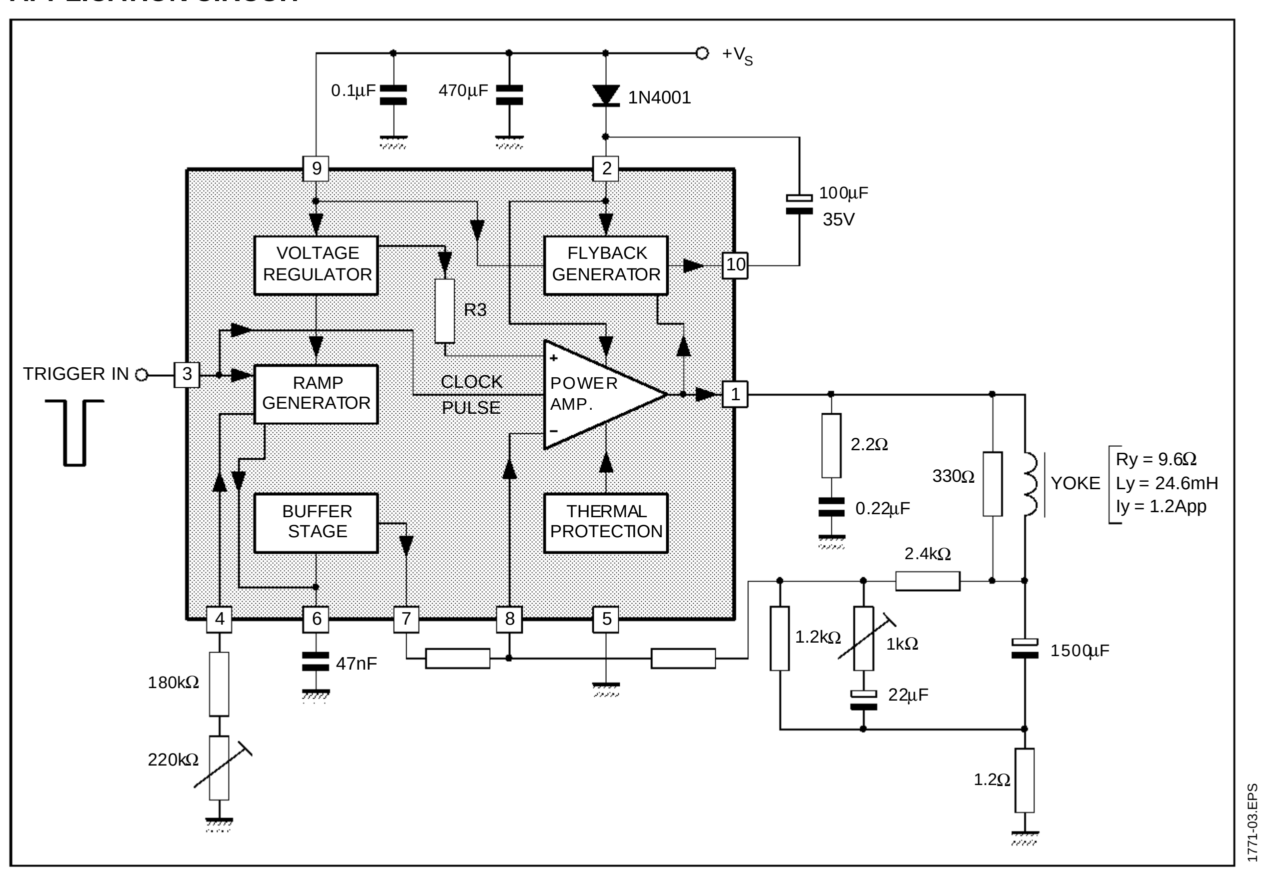
Notes : 1. The trigger input circuit can accept, with a metal option, positive and negative going input pulses.
2. $th = \frac{1.2 \cdot t_S}{V_{PP}}$ where t_S is the vertical period and V_{PP} is ramp amplitude at Pin 6

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified) (continued)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
DC (V_S = 24V)						
V_S	Operating Supply Voltage Range		10		30	V
I_1	Peak-to-peak Operating Current Range		0.4		2.5	A
I_S	Supply Current	I_Y = 2.4A_{pp}		315		mA
V_1	Flyback Voltage	I_Y = 2.4A_{pp}		51		V
V_7	Sawtooh Pedestall Voltage			1.85		V
T_{JS}	Junction Temp. for Thermal Shutdown			145		°C

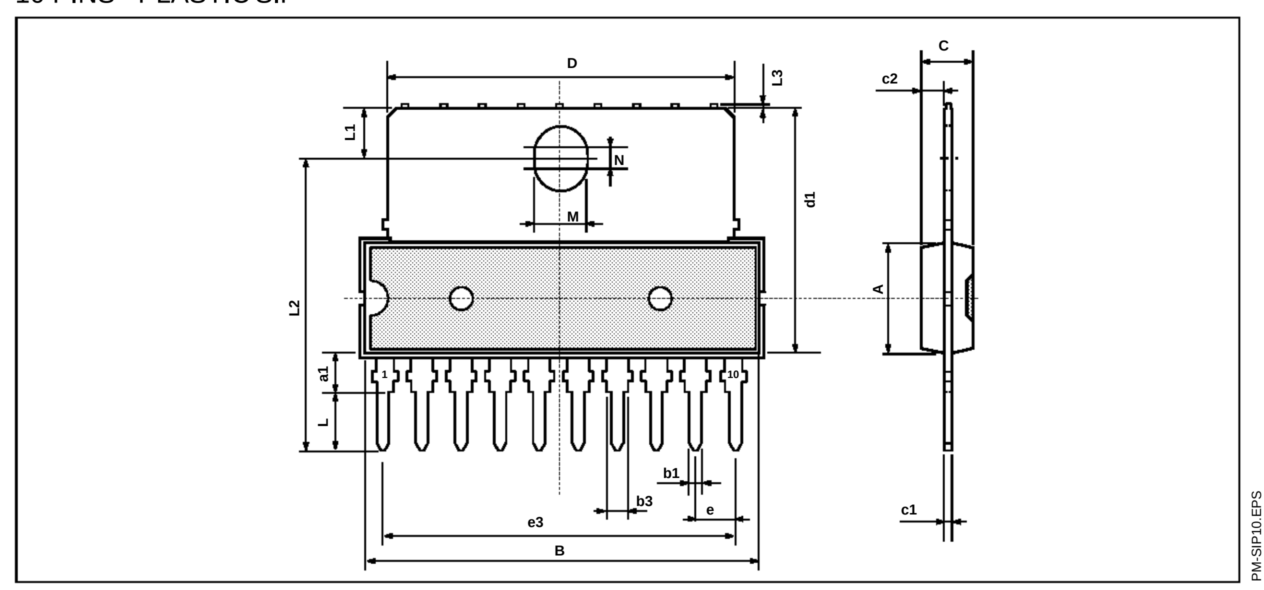
1771-04.TBL

APPLICATION CIRCUIT



PACKAGE MECHANICAL DATA

10 PINS - PLASTIC SIP



PM-SIP10.EPS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			7.1			0.280
a1	2.7		3	0.106		0.118
B			24.8			0.976
b1		0.5			0.020	
b3	0.85		1.6	0.033		0.063
C		3.3			0.130	
c1		0.43			0.017	
c2		1.32			0.052	
D			23.7			0.933
d1		14.5			0.571	
e		2.54			0.100	
e3		22.86			0.900	
L	3.1			0.122		
L1		3			0.118	
L2		17.6			0.693	
L3			0.25			0.010
M		3.2			0.126	
N		1			0.039	

SIP10.TBL